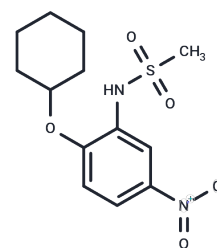


NS-398

Chemical Properties

CAS No. : 123653-11-2
 Formula: C₁₃H₁₈N₂O₅S
 Molecular Weight: 314.36
 Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
 Actual storage temperature shall be subject to the COA.



Biological Description

Description	NS-398 (N-(2-cyclohexyloxy-4-nitrophenyl)methane sulfonamide) is a COX-2 inhibitor with anti-inflammatory activity.
Targets(IC50)	COX
In vitro	NS-398 inhibits COX-2 enzyme activity in a concentration dependent manner, the IC ₅₀ being 3.8 μM, whereas NS-398 at 100 μM has no effect on COX-1 activity[1]. At 10 μM, NS-398 treatment results in increased production of COX-2 and the pro-inflammatory cytokine. NS-398 (10 μM) induces apoptosis in LNCaP cells, but not in the more aggressive, androgen-unresponsive C4-2b cells. The C4-2b cells are observed to continue to proliferate when treated with NS-398 and continues to retain malignant phenotype characteristics. NS-398 treatment results in C4-2b cell differentiation into an unusual neuroendocrinelike cell. These neuroendocrine-like cells produces both epithelial (cytokeratin 18 and prostate specific antigen) and neuronal (neuron-specific enolase and chromogranin A) proteins. Furthermore, this C4-2b cellular response to NS-398 is mediated by NF-κB transcription factor activation. NS-398 induces NF-κB and down-regulates IκB-α protein expression in LNCaP C4-2b cells[2].
In vivo	NS398 could inhibit Cox-2 expression induced by acoustic injury and could attenuate noise-induced hearing threshold shifts and cochlear hair cell loss. The inhibition of Cox-2 by NS398 could attenuate Noise-induced hearing loss(NIHL)and related hair cell damage.[3].
Cell Research	1×10 ⁶ cells are plated in six well cluster plates with 2 ml of medium for 24 h. At time point 0, medium was removed, cells were carefully washed with phosphate buffered saline (PBS) and serum free(SF), phenol-red free medium containing 0.5 μg/ml BSA was added. Incubations are continued for an additional 72 h with or without increasing NS-398 concentrations. NS-398 stocks (5 mM) are dissolved in 0.1% dimethylsulfoxide (DMSO). Cells and culture medium are harvested at 24 h time intervals. Dead cells are removed by gentle washing with PBS and cell number determined by direct counting using trypan blue dye exclusion to identify viable cells. DMSO (0.1%) is added to control cultures.(Only for Reference)

Solubility Information

A DRUG SCREENING EXPERT

Solubility	DMSO: 50 mg/mL (159.05 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (6.36 mM),Solution. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1811 mL	15.9053 mL	31.8107 mL
5 mM	0.6362 mL	3.1811 mL	6.3621 mL
10 mM	0.3181 mL	1.5905 mL	3.1811 mL
50 mM	0.0636 mL	0.3181 mL	0.6362 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Futaki N, et al. Prostaglandins. 1994, 47(1):55-9.

Wang H, Hu Y, He F, et al. All-trans retinoic acid and COX-2 cross-talk to regulate BMP9-induced osteogenic differentiation via Wnt/ β -catenin in mesenchymal stem cells. Biomedicine & Pharmacotherapy. 2019, 118: 109279

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